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Research Paper

Chemical, Sensory and Survival Properties of *Lactobacillus Plantarum* in Peach Juice

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ABSTRACT

Background Nowadays, the consumption of probiotic food products has become common. Since the consumption of some dairy products is not allowed for some people, there is a need for some alternative foods. Fruits are suitable for the production of probiotic drinks due to the lack of any adverse effects.

Objective This study was aimed to investigate the chemical and sensory properties and the survival of *Lactobacillus plantarum* (L. plantarum) bacteria in peach juice.

Methods This experimental study was conducted in Food Safety Laboratory of Qazvin University of Medical Sciences in autumn 2018. The peach juice samples were prepared from San Inch Company in Iran and kept in refrigerator to be used for the inoculation of L. plantarum. On days 1, 3, 5, 7 and 10, the survival of this bacterium, and changes in its pH and acidity were measured in two test and control groups. At the 10_{th} day, the samples underwent evaluation. Data were analyzed in SPSS V. 23 software using independent t-test and ANOVA at the significant level of $P<0.05$.

Findings After 10 days, the number of L. plantarum was reduced from 8.7 to 8.4 log cycles. With the increase of storage time, pH value significantly decreased and acidity increased ($P<0.05$). The sensory properties of the probiotic product were not significantly different from that of non-probiotic product and were acceptable for the consumer ($P>0.05$).

Conclusion L. plantarum has a good shelf life in peach juice. Therefore, it can be concluded that peach juice is a suitable product for producing probiotic juice by adding L. plantarum.

Extended Abstract

1. Introduction

Inadequate nutrition can cause various diseases. One way to prevent these diseases is to eat probiotic foods [1]. Probiotics are microorganisms that deploy to different parts of the body (especially to the gut, as natural flora) to maintain and improve balance in intestinal microflora (between beneficial and harmful microorganisms) and create health-promoting properties for the host [2]. Currently, most probiotic products are dairy products, but the demand for non-dairy probiotic products has increased in recent years [4]. People with lactose intolerance and vegetarians have reduced the consumption of dairy products. If no suitable alternative to dairy probiotic products is found for vegetarians, probiotics with very high medicinal properties will gradually lose

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